What is claimed is:

1. A method that exposes a second object by transferring a pattern of a first object with exposure beam, and successively exposes a plurality of divided regions having different target exposure levels defined on said second object, by emitting pulses of the exposure beams from a pulsed energy source and moving said first object synchronously in relation to said second object with respect to the exposure beam, comprising the steps of:

setting a transmittance of light reducing member disposed in an optical path of the exposure beam based on at least one target exposure level; and

adjusting an exposure level control parameters when exposing the divided regions having different target exposure levels according to individual target exposure levels without changing the selected transmittance of the light reducing member.

2. A method according to claim 1, wherein said exposure level control parameters include at least one parameter from a group of parameters that includes a width of the exposure beam on the second object in the moving direction of the second, a moving speed of the second object, an oscillation frequency of the exposure beam produced by the pulsed energy source, and an energy of the exposure beam emitted from the pulsed energy source.

3. A method according to claim 1, wherein said transmittance of light reducing member is determined according to a minimum target exposure level in the plurality of exposure levels.

4. A method according to claim 1, wherein said target exposure levels are assigned to individual divided regions according to distances from a center of the second object.

5. A method that illuminates a first object with exposure beam and that successively exposes a plurality of divided regions defined on a second object with said exposure beam, comprising the steps of:

determining different levels of target exposure levels for said plurality of divided regions defined on the second object; and

setting exposure levels of the exposure beam required for each divided region by changing exposure parameters which is changeable without mechanically switching optical components or performing test emissions of the exposure beam, when successively exposing the divided regions defined on the second object.

6. A method according to claim 5, wherein said target exposure levels for a plurality of divided regions is predetermined by exposure testing using an object that is deemed equivalent to the second object.

7. A method according to claim 5, wherein said exposure beam is comprised by pulses of laser beam output from a pulsed light source, the second object and the first object are moved in synchronization with respect to the exposure beam, and at least one of the exposure parameters including an oscillation frequency of the pulsed light source, a target pulse energy of each pulse emitted from the pulsed light source, and a scanning speed of the second object, is changed to set an exposure level of the exposure beam to each divided region.

8. A method according to claim 5, wherein a light reducing member alters transmittance of the exposure beam by switching luminance of the exposure beam on the second object over several stages, and

a common value of transmittance is used for exposing different divided regions.

9. A method according to claim 8, wherein said transmittance of light reducing member is chosen based on a minimum value of exposure level selected from a plurality of target exposure levels for a plurality of divided regions defined on the second object.

10. An apparatus that illuminates a first object with exposure beam and that successively exposes a plurality of divided regions defined on a second object with said exposure beam, comprising:

a pulsed light source that generates pulses of light to serve as an exposure beam;

a stage system that moves the first object synchronously with the second object;

a memory section that stores target exposure levels in a plurality of different levels for a plurality of divided regions defined on the second object; and

a control system that changes at least one exposure parameter when successively exposing the plurality of divided regions defined on the second object according to the target exposure levels stored in the memory section, wherein said one exposure parameter includes ossilation frequency of the pulsed light source, target per-pulse energy of the pulses emitted from the pulsed light source, and speed of scanning the second object controlled by the stage system.

11. A method according to claim 10, wherein a light reducing member is provided between said pulsed light source and said second object to switch transmittance of the exposure beam in a plurality of stages.

12. A method that successively exposes a plurality of divided regions defined on a second object by projecting an image of a pattern through a projection optical system on a first object onto said second object, comprising the steps of:

detecting a level of reflected light reflecting from the second object or an evaluation object in place of the second object through the projection optical system; and

setting a target exposure level for each of the plurality of divided regions defined on the second object based on the result of the detecting step.

13. An apparatus that successively exposes a plurality of divided regions defined on a second object by projecting an image of a pattern through a projection optical system on a first object onto said second object, comprising:

a detector that detects a level of reflected light reflecting from the second object through the projection optical system; and

a control system that determines a target exposure level for each of the plurality of divided regions according to output data from the detector.

14. An apparatus according to claim 13, wherein said detector is used also to adjust imaging characteristics of the projection optical system.

15. An apparatus according to claim 13, wherein said output data from the detector is dependent on a thickness of a photo-sensitive film applied on the second object.

16. An apparatus according to claim 13, wherein said control system determines a target integrated exposure level for each divided region of the plurality of divided regions defined on the second object according to output data from the detector related to respective distances from an approximate center of the second object.

17. A method that successively exposes a plurality of divided region defined on a second object by projecting an image of a pattern through a projection optical system on a first object onto said second object for using a exposure beam, comprising the steps of:

detecting condition of the surface of the second object;

obtaining plurality of target exposure levels corresponding to the position within the second object based on the result of the detecting step;

setting a transmittance of light reducing member disposed in an optical path of the exposure beam based on at least one target exposure level ; and

adjusting an exposure level control parameters when exposing the divided regions according to individual target exposure level without changing the selected transmittance of the light reducing member.

18. A method of manufacturing a device including the steps of imprinting a device pattern on a workpiece using an exposure method according to one claim 1.

19. A method of manufacturing an electronic device including the steps of imprinting a device pattern on a workpiece using an exposure method according to claim 5.

20. A method of manufacturing an electronic device including the steps of imprinting a device pattern on a workpiece using an exposure method according to claim 12.

21. A method of manufacturing an electronic device including the steps of imprinting a device pattern using an exposure method according to claim 17.

22. A method of manufacturing an electronic device including the steps of imprinting a device pattern on a workpiece using an exposure apparatus according to claim 10.

23. A method of manufacturing an electronic device including the steps of imprinting a device pattern on a workpiece using an exposure apparatus according to claim 13.